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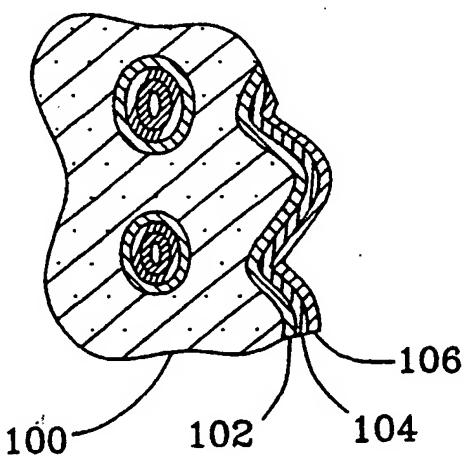
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(54) Title: CATALYST STRUCTURE AND METHOD OF FISCHER-TROPSCH SYNTHESIS



(57) Abstract: The present invention includes Fischer-Tropsch catalysts, reactions using Fischer-Tropsch catalysts, methods of making Fischer-Tropsch catalysts, processes of hydrogenating carbon monoxide, and fuels made using these processes. The invention provides the ability to hydrogenate carbon monoxide with low contact times, good conversion rates and low methane selectivities. In a preferred method, the catalyst is made using a metal foam support.

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INTERNATIONAL SEARCH REPORT

International Application No
PC., JS 00/22422

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C10G2/00 C07C1/04 B01J19/00 B01J37/02 B01J35/00
 B01J35/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 C10G C07C B01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 472 533 A (MOSKOVITS MARTIN) 18 September 1984 (1984-09-18) claim 1 column 1, line 14 - line 22 ---	1-3,11, 13-16 17
A	WO 00 06301 A (BATTELLE MEMORIAL INSTITUTE) 10 February 2000 (2000-02-10) claims 1-10 ---	1-3, 11-16
A	EP 0 086 538 A (VEG GASINSTITUUT NV) 24 August 1983 (1983-08-24) claims 1-7 ---	1,3, 14-17
A	US 5 786 393 A (CHAUMETTE PATRICK ET AL) 28 July 1998 (1998-07-28) claims 1-5,8,11 -----	1,3,11, 20

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

& document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

28 November 2000

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/22422

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-3, 11-16, 17-19

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-3, 11-16, 17-19

A catalyst for the hydrogenation of carbon monoxide comprising a porous support, an interfacial layer and a Fischer-Tropsch catalytic metal and a process using this catalyst.

2. Claims: 4-6, 8-10, 20-21

Claim 4 and its dependent claims 5 and 6 describe a Fischer Tropsch catalyst comprising a catalytic metal on a porous support and characterised by an activity such that the selectivity to methane is less than 25 % and the carbon monoxide conversion is greater than 25 % and a process using this catalyst.

3. Claim : 7

A reactor for the hydrogenation of carbon monoxide, having thermally conductive walls and containing a catalyst comprising a supported Fischer-Tropsch catalyst.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JS 00/22422

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